

Application Number 10/712,164
Amendment dated June 21, 2007
Reply to Office Action of February 8, 2007

Amendments to the Claims:

Please amend claim 1, 5, 9 and 12 as follows.

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1. (Currently Amended) A super twisted nematic (STN) liquid crystal display (LCD) driver that drives an STN LCD comprising:

a sub frame counter, which counts a number of sub frames in a frame in response to a clock signal and generates a sub frame flag signal every time each sub frame is counted in the frame;

an N clock counter, which receives an N-line signal and generates an N-line flag signal every time the number of N-lines counted is N in response to the clock signal;

a frame counter, which receives a frame rate control (FRC) selection signal, counts the number of the sub frame flag signals received from the sub frame counter, and generates a frame flag signal every time the number of the sub frame flag signals counted is n; and

a liquid crystal polarity inversion signal generator, which receives selects one of the sub frame flag signal~~[],]~~ and the N-line flag signal, ~~and the frame flag signal~~ in response to a selection signal, and further selects the frame flag signal which inverts a level of a liquid crystal polarity inversion signal in the frame, and generates ~~[[a]]~~the liquid crystal polarity inversion signal that inverts a polarity of an STN liquid crystal of the STN LCD in the frame.

2. (Original) The STN LCD driver of claim 1, wherein the STN LCD driver further comprises:

a column driver, which receives data and generates a segment voltage that drives a column electrode of the STN LCD in response to a level of the liquid crystal polarity inversion signal; and

a row driver, which receives a row selection signal and generates a com voltage that drives a row electrode of the STN LCD in response to the level of the liquid crystal polarity

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inversion signal.

3. (Original) The STN LCD driver of claim 1, wherein the FRC selection signal has information on whether a driving method of the STN LCD is an nFRC method, where n is a natural number.

4. (Original) The STN LCD driver of claim 1, wherein the N-line signal has information used to divide a frame into N sub frames, where N is a natural number.

5. (Currently Amended) A driving method of a super twisted nematic (STN) liquid crystal display (LCD) driver that drives an STN LCD, the driving method comprising:

(a) counting the number of sub frames in a frame in response to a clock signal and generating a sub frame flag signal every time each sub frame is counted in the frame;

(b) receiving an N-line signal and generating an N-line flag signal in response to input of the clock signal every time the number of N-line counted is N in response to the clock signal;

(c) receiving a frame rate control (FRC) selection signal, counting the number of sub frame flag signals received from the sub frame counter, and generating a frame flag signal every time the number of sub frame flag signals counted is n; and

(d) selecting one of the sub frame flag signal[[,]]and the N-line flag signal, ~~and the frame flag signal~~ in response to a selection signal, and further selecting the frame flag signal which inverts a level of a liquid crystal polarity inversion signal in the frame, and generating [[a]]the liquid crystal polarity inversion signal that inverts a polarity of an STN liquid crystal of the STN LCD in the frame.

6. (Original) The driving method of claim 5, wherein the driving method of the STN LCD driver further comprises:

(e) receiving data and generating a segment voltage that drives a column electrode of the STN LCD in response to the level of the liquid crystal polarity inversion signal; and

(f) receiving a row selection signal and, in response to the level of the liquid crystal polarity inversion signal, generating a com voltage that drives a row electrode of STN LCD.

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7. (Original) The driving method of claim 5, wherein the FRC selection signal has information on whether a driving method of the STN LCD is an nFRC method, and the n is a natural number.

8. (Original) The driving method of claim 5, wherein the N-line signal has information used to divide a frame into N sub frames, and the N is a natural number.

9. (Currently Amended) A driving method of a super twisted nematic (STN) liquid crystal display (LCD) driver that drives an STN LCD, the driving method comprising:

- (a) determining whether a frame rate control (FRC) selection signal is in accordance with an nFRC method;
- (b) counting a number of sub frames in a frame; and
- (c) generating a liquid crystal polarity inversion signal in the frame that inverts a polarity of an STN liquid crystal of the STN LCD if the number of sub frames in the frame is n.

10. (Original) The driving method of claim 9, wherein the driving method of the STN LCD driver further comprises:

- (d) receiving data and, in response to the level of the liquid crystal polarity inversion signal, generating a segment voltage that drives a column electrode of the STN LCD; and
- (f) receiving a row selection signal and, in response to the level of the liquid crystal polarity inversion signal, generating a com voltage that drives a row electrode of the STN LCD.

11. (Original) The driving method of claim 9, wherein n sub frames constitute one frame.

12. (Currently Amended) A driving method of a super twisted nematic (STN) liquid crystal display (LCD) driver using an nFRC method, wherein n is a natural number, and wherein a polarity of an STN [[LCD]] liquid crystal is inverted in each frame.

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13. (Original) The driving method of claim 9, wherein one frame is comprised of n sub frames.